

What is claimed is:

- 1) A resin comprising: polyethylene terephthalate or a copolyester of polyethylene terephthalate and a dicarboxylic acid or its ester equivalent or a copolyester of polyethylene terephthalate and a diol, and substituted cyclic anhydride, said substituted cyclic anhydride being not more than 100 microequivalents per gram of said polyester or copolyester, said resin having a CEG content greater than about 25 microequivalents per gram.
- 2) The resin of claim 1, wherein said substituted cyclic anhydride is selected from the class consisting of substituted succinic anhydride, substituted glutaric anhydride, substituted maleic anhydride, and substituted phthalic anhydride.
- 3) The resin of claim 2, wherein said substituted succinic anhydride is selected from the group of methyl succinic anhydride, 2,2-dimethyl succinic anhydride, phenyl succinic anhydride, octadecenyl succinic anhydride, hexadecenyl succinic anhydride, eicosodecenyl succinic anhydride, 2-methylene succinic anhydride, and mixtures of these.
- 4) The resin of claim 2, wherein said substituted glutaric anhydride is selected from the group of 3-methyl glutaric anhydride, phenyl glutaric anhydride, diglycolic anhydride, 2-ethyl 3-methyl glutaric anhydride, 2,2- dimethyl glutaric anhydride, 3,3-tetramethylene glutaric anhydride, and mixtures of these.
- 5) The resin of claim 2, wherein said substituted phthalic anhydride is selected from the group of 4-methyl phthalic anhydride, 4-t-butyl phthalic anhydride, tetrahydronphthalic anhydride, hexahydrophthalic anhydride, and mixtures of these.

- 6) The resin of claim 2, wherein said substituted maleic anhydride is selected from the group of tetrahydrophthalic anhydride, dimethyl maleic anhydride, 1-cyclopentene-1,2-dicarboxylic anhydride or mixtures of these.
- 7) The resin of claim 1, wherein said resin has an I.V. of greater than about 0.70.
- 8) The resin of claim 1, wherein said CEG is less than about 80 microequivalents per gram.
- 9) A preform made from polyethylene terephthalate or a copolyester of polyethylene terephthalate and a dicarboxylic acid or its ester equivalent or a copolyester of polyethylene terephthalate and a diol, and substituted cyclic anhydride, said substituted cyclic anhydride being not more than 100 microequivalents per gram of said polyester or copolyester, said resin having a CEG content greater than about 25 microequivalents per gram.
- 10) The preform of claim 9, wherein said substituted cyclic anhydride is selected from the class consisting of substituted succinic anhydride, substituted glutaric anhydride, substituted maleic anhydride, and substituted phthalic anhydride.
- 11) A bottle made from polyethylene terephthalate or a copolyester of polyethylene terephthalate and a dicarboxylic acid or its ester equivalent or a copolyester of polyethylene terephthalate and a diol, and substituted cyclic anhydride, said substituted cyclic anhydride being not more than 100 millimoles per kilogram of said polyester or copolyester, said resin having a CEG content greater than about 25 millimoles per kilogram.
- 12) A method of making a resin, used to make a container having reduced caustic stress cracking, comprising: forming polyester or copolyester by esterification followed by polycondensation to make a polyethylene terephthalate or polyethylene terephthalate copolyester; adding at the end of said

polycondensation not more than 100 millimoles per kilogram based on said polyester or copolyester of a substituted cyclic anhydride, said resin having a CEG content greater than about 25 millimoles per kilogram, wherein said resin has a I.V. of greater than about 0.70.

- 13) The method of claim 12, wherein said substituted cyclic anhydride is selected from the group of substituted maleic anhydride, and substituted phthalic anhydride, said selected from the class consisting of substituted succinic anhydride, substituted glutaric anhydride.
- 14) The method of claim 12, wherein said substituted succinic anhydride is selected from the group of methyl succinic anhydride, 2,2-dimethyl succinic anhydride, phenyl succinic anhydride, octadecenyl succinic anhydride, hexadecenyl succinic anhydride, eicosodecenyl succinic anhydride, 2-methylene succinic anhydride, and mixtures of these.
- 15) The method of claim 12, wherein said substituted substituted glutaric anhydride is selected from the group of 3-methyl glutaric anhydride, phenyl glutaric anhydride, diglycolic anhydride, 2-ethyl 3-methyl glutaric anhydride, 2,2- dimethyl glutaric anhydride, 3,3-tetramethylene glutaric anhydride, and mixtures of these.
- 16) The method of claim 12, wherein said substituted phthalic anhydride is selected from the group of 4-methyl phthalic anhydride, 4-t-butyl phthalic anhydride, tetrahydronphthalic anhydride, hexahydronphthalic anhydride, and mixtures of these.
- 17) The method of claim 12, wherein said substituted maleic anhydride is selected from the group of tetrahydronphthalic anhydride, dimethyl maleic anhydride, 1-cyclopentene-1,2-dicarboxylic anhydride or mixtures of these.

- 18) The method of claim 12, wherein said substituted anhydride has a melt point of less than about 100° C.
- 19) The method of claim 12, wherein said substituted anhydride has a melt point at about 25° C.
- 20) A container having reduced caustic stress cracking made from the resin produced according to claim 12.